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REVIEW

EVANDRO AGAZZI (Ed) [1986]: *Epistemologia: La filosofia della scienza in Italia nel '900*

Franco Angeli s.r.l., Milano, pp. 1–512
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Eighteen authors have contributed to this huge review of the Philosophy of science in Italy during the 20th century. Their contributions cover the origins of modern philosophy of science at the turn of the 19th to the 20th century, the philosophy of science during the first half of the 20th c. (until 2nd World war), the 'new philosophy of science' that arose after the war, and contemporary trends in the field. All this is framed between a critical Introduction by AGAZZI himself and an Appendix containing the list of reviews and main publications, as well as names of Journals as produced in Italy, analytically and critically presented.

Subject-matters as positivism and pragmatisim, foundation of mathematics, intuitionism, logistic and artificial languages, idealism, the interpretation of relativity theory, quantum physics, the particular period of transition and renewal lasting from the First till the Second world war, neo-positivism, Marxist tendencies, history versus philosophy of science, the special philosophies of mathematics and of physics, of cybernetics and systems, of social science, objectualistic tendencies, and Popperianism in recent years, are dealt with. The many '-isms' included in that list are typical of what has been done and how it has been done in all these hundred years in Italy.

Indeed, by looking merely at the title of the book, a naive reader might expect to find a series of reports on the special contributions made by Italian savants and thinkers to the philosophy of science, summarizing their works and listing their main results and advances. If this were the sole expectation of the reader, he would be disappointed. For, very little of that is explicitly present in the book.

Surely, to begin with, representatives of the older generation active in the field of philosophy of science like the author of the present review have of course in the late twenties and the thirties of this century heard of names like those of PEANO, ENRIQUES, FANTAPPIÉ and others in reference with what was then described as the Crisis of foundation of mathematics, and they had eventually read and studied their papers and books. Therefore they might

think that e.g. the main results attained by such authors would be described and judged according to their importance in the light of the present situation fifty years or more later. Or one might wish to know what are the specific contributions of more recent authors to the progress of the philosophy of the various specific sciences . . . However, little of that constitutes the contents proper of this big book. Rather, many of the contributions are papers on what might be called partly the history, partly the critique of the polemics between schools of thought with special reference to the philosophy of science. Still, for all that, some contributions are more precisely conceived as a clear presentation of what scholars have contributed to the clarification of problems of the philosophy of the various scientific fields.

So the question arises, why the book under review more or less inevitably presents itself as it does. The reason seems to be found in the very nature of traditional philosophizing in Italy still very much practised today: Philosophers in that country do for a considerable part live on, and love, philosophical controversy. This may be both their strength and their weakness. Weakness, evidently, because if one persists in quarrelling with others about which is the right stand-point, he will easily miss the train and remain rather unproductive within the actual disentanglement of specific problematics at hand. Strength, because it makes the scholars extremely sharp in the art of rhetorics and argumentation.

This may explain why the development of philosophy in Italy, even in a field as precisely delimited as the philosophy of science, has consisted in a long and weary controversy between the -isms, much more so than it has been the case, especially before the Second world war, in the rest of the Continent. Of course, such controversies did also take place, e.g. in France, Holland and elsewhere between extreme tendencies like neo-positivism or intuitionism, but there, the situation was less polemic and disputatious, for the scholars would prefer to write matter-of-fact papers.

It may also be due to two circumstances. One is that, during the 18th and 19th centuries, Italian philosophy, especially as it was concerned with the advance of the sciences, had declined. Hence, on the turn between the 19th and the 20th century, when not only professional philosophers but also and advantageously scholars in the specific fields—especially mathematicians and physicists—began to write on the philosophy of science (mainly in France and Germany), this very kind of philosophy developed on a scene where standpoints soon began to oppose one another. And since controversy seems to be a favourite occupation among Italians, this particular kind of philosophizing developed. It was nevertheless luck that mathematicians of rank were among the protagonists (PEANO and others have already been mentioned and a number of others could be named. The only name still more often quoted in the book, yet for a more recent period, is that of LUDOVICO GEYMONIAT, also very

much interested in mathamtics, a 'neo-illuministic libertarian' as he is called at one place in the book).

Another circumstance may reside in the fact that philosophy, generally speaking, was, until rather late in the 20th century, very much dominated in Italy by two personalities of high status: CROCE and GENTILE, who were outstanding protagonists of an idealism which not simply combatted scientism and positivism, but claimed to explain science as a reductive and pragmatic type of cognitive activity. For CROCE, science was outside philosophy. Backed by historicism, idealism in Italy has been qualitatively and quantitatively very much represented until our day, but it has also gone through an evolution as regards the consideration of science, since GUZZO for instance insisted upon the humanistic value of the sciences, or SPIRITO attributed to them an active rôle in the regeneration of philosophy.

After the last war, everything has changed in the whole world. Also in Italy, one had to adapt philosophic reflection to a totally new cultural, political and epistemological situation. The strongest impulse came from L. GEYMONIAT, however, as late as the sixties. Nevertheless, in the thirties and forties already, a scientific phenomenon had started in Italy after many decades of relative unproductivity and stagnation: a school of physics emerged of great quality and intense activity, mostly concentrated on theoretical quantum physics and mainly situated at Rome, yet also with ramifications elsewhere and in the other fields of that science (relativity theory, astrophysics and the like). The central figure there has been ENRICO FERMI. Even though he cannot be said to have been a 'philosopher of physics' in the proper sense himself, this emergence of physics which he symbolized has lately been accompanied by the appearance of a number of physicists (also astronomers etc.) interested in, and working specifically on problems of the philosophy of physics, even more so than it is the case in other countries of comparable size. This has some analogy with what had happened in the early years of the century with reference to mathematics. For, if today there is, so to speak, no problem (or 'crisis') of the foundation of mathematics left, there is—since the beginning of the BOHR-EINSTEIN controversy—still with us, a problem (or 'crisis') of the foundation of (theoretical) physics. In contradistinction with older days, however, Italian scholars today refrain in that respect from mere controversies and are mainly concerned with matter-of-fact questions.

Another field, whose importance has been recognized and has increased among Italian scholars recently, is the philosophy of social science and of the humanities as sciences. There of course, one may expect adepts of Marxism and the like (GRAMSCI and others) to be particularly active. Where this is the case, however, they are of the traditional disputatious kind rather than true to the real authentic problematics.

The relationship between the so-called empirical sciences and metaphysics

is being approached nowadays in a way rather free from prejudices, as is known to exist, e.g. within analytical and similar schools abroad. This problematic may become more and more important in the coming decades. Here, AGAZZI himself is contributing important material, especially because he is trained not only in traditional philosophy, but also in formal logic and the history of the (exact) sciences. His impact on the consideration of science *versus* ethics is also of considerable bearing for the future.

It appears preferable to refrain from quoting a lot of names, for there are so many cited in the book, that a choice might sound as uttering a kind of judgement of value and this is not possible to do among living philosophers. If at the dawn of the century the interest was mostly in the foundation of mathematics, it also had views on Darwinism and, very specifically yet oddly as it appears today, on the possibility and the expectation of successfully constructing artificial languages (there, the friendship between PEANO and the French mathematician COUTURAT degenerated into an estrangement; in our days, nobody thinks anymore of the applicability of an artificial world language, yet there was a time when this was considered a main possibility for the achievement of universal understanding and peace!).

The book does also give some information on the work done in the field of history of science, especially the relationship between the history and the philosophy of science.

The abundance of papers and books published in Italy on the various topics of the philosophy of science is amazing. Apart from translations of standard foreign works, many more have been translated from French, English, German etc. Of course, Italian scholars are ordinarily very good at French as well as at English or German and would not really need these translations, but the fact remains and is a proof of the lively interest taken in foreign activity in the field. They, themselves, write of course mostly in their own language, but quite a few do also publish—mainly articles—in foreign Reviews and with foreign Publishing companies. Innumerable publishing companies are spread throughout Italy; many have epistemological titles on their lists (we quote here only the most renowned ones: Armando in Rome, Feltrinelli and Angeli in Milan, Il Mulino in Bologna, Cedam in Padua, Bombiani, Boringhieri, Mondadori, Einaudi, Zanichelli and others). The number of Journals where papers on the philosophy of science are published is amazing; from the celebrated *Rendiconti di Palermo* (and the other Academies of course), the more famous journals *Scientia* and *Logos*, till the most recent *Epistemologia*, we would count at least a dozen journals. Some more or less extensive and/or critical reports have been published—in Italy or abroad—on developments of the philosophy of science in Italy, especially by FILIASI-CARCANO, SELVAGGI, SOMENZI, AGAZZI, PERA . . .

The book under review is rather difficult, at places tedious, to read. Several contributions are written in a cumbrous Italian. The easier ones are mostly

written by scientists. The old French man of letters BOILEAU said that *ce qui se conçoit bien s'énonce clairement.* Yet be that as it may, both EDMUND BURKE and ALBERT SCHWEITZER have drawn the attention of philosophers upon the fact that the clearer a text, the poorer it is in contents!